

CLAIMS

1. (Currently amended) A device for forming a two dimensional image on a screen comprising:
a coherent illumination means;
an electrically addressed spatial light modulator means configured to diffract light received located in a path of light from the coherent illumination means, wherein the light is received by said electrically addressed spatial light modulator means as a plurality of sequential computer generated images;
~~means for producing sequential computer generated hologram images for display on the electrically addressed spatial light modulator means; and~~
optics configured to direct light diffracted by the electrically addressed spatial light modulator means to different areas of the screen to optically build up a single frame of the two dimensional image over time, wherein each of the plurality of sequential computer generated images correspond to one of the different areas of the screen displayed on the electrically addressed spatial light modulator means result in a single frame of the two dimensional image.
2. (Currently amended) The device according to claim 1 wherein the electrically addressed spatial light modulator means comprises a plurality of electrically addressed spatial light modulators, each modulator configured to receive a different color sequence of computer generated images, wherein said single frame is built up using a plurality of computer generated images from each of the different color sequences.
3. (Previously presented) The device according to claim 1 wherein the coherent illumination means illuminates the electrically addressed spatial light modulator means with red, green and blue light.
4. (Previously Presented) The device according to claim 3 wherein the electrically addressed spatial light modulator means is sequentially illuminated by the coherent illumination means with red, green and blue light.

5. (Previously presented) The device according to claim 3 wherein separate portions of the electrically addressed spatial light modulator means are simultaneously illuminated by the coherent illumination means with red, green and blue light.

6. (Previously presented) The device according to claim 1 wherein a frame rate of the electrically addressed spatial light modulator means is greater than a frame rate of the two dimensional image formed at the screen.

7. (Currently amended) The device according to claim 2, wherein each different color is divided into a number of channels, each channel dedicated to one of the different areas of said screen ~~1 in which the means for producing computer generated hologram images comprises a store of a plurality of pre-calculated computer generated holographic elements.~~

8. (Currently amended) The device according to claim 1 in which ~~the means for producing computer generated hologram images is configured to produce computer generated hologram images for display on the electrically addressed spatial light modulator means that provide a regular~~ said light is sequentially directed to the different areas of said screen, each of said different areas associated with a number of lines of pixels that when combined appear to form said two dimensional image comprised of an array of said pixels on the screen.

9. (Currently amended) The device according to claim 8 wherein a rate of sequentially directing said light to said different areas is faster than a frame rate of displaying said two dimensional ~~the array of pixels on the screen is sub-divided into blocks and the image at the screen is formed by sequentially writing one or more blocks to the screen.~~

10. (Previously presented) The device according to claim 1 wherein the coherent illumination means comprises at least one laser.

11. (Currently amended) The device according to claim 1 further comprising wherein additional magnification optics configured to magnify said ~~are provided such that a magnified~~ two dimensional image ~~may be~~ formed at the screen.

12. (Currently amended) A method of forming a two dimensional image on a screen comprising:

illuminating an electrically addressed spatial light modulator with coherent light;[[,]]
displaying a computer generated hologram image on the electrically addressed spatial light modulator so as to diffract light therefrom;[[,]]

sub-dividing the two dimensional image into a number of adjacent blocks, wherein each of said adjacent blocks is associated with a different region of said screen;[[,]]

~~sequentially writing the blocks to the screen, and~~
directing light diffracted by the electrically addressed spatial light modulator to sequentially write the blocks to ~~produce a two dimensional image at the screen.~~

13. (Cancelled)

14. (Currently amended) A device for forming a two dimensional ~~an~~ image on a screen comprising;[[;]]

~~at least one coherent laser,~~
~~at least one~~ a plurality of electrically addressed spatial light modulators configured to simultaneously diffract light received from ~~modulator located in the path of light from said at least one or more coherent light sources; laser,~~
~~a computer for producing at least one computer generated hologram image for display on said at least one electrically addressed spatial light modulator, and~~
optics configured to direct light diffracted by said plurality of ~~at least one~~ electrically addressed spatial light modulators ~~modulator~~ to the screen, wherein a frame rate of each of the electrically addressed spatial light modulators ~~modulator means~~ is greater than a frame rate of the two dimensional image formed at the screen.

15. (Currently amended) The device according to claim ~~14~~ further comprising a plurality of electrically addressed spatial light modulators 16 wherein said array of pixels is sub-divided into a plurality of adjacent blocks.

16. (Currently amended) The device according to claim 14 wherein said diffracted light is configured to cumulatively build up said two dimensional image comprised of computer ~~is configured to produce computer generated hologram images for display on said at least one electrically addressed spatial light modulator that provides a regular array of pixels on said screen.~~

17. (Currently amended) The device according to claim ~~16~~ 15 wherein ~~the array of pixels on the screen is sub-divided into blocks and the two dimensional image at the screen is~~ formed by sequentially writing said plurality of one or more blocks to the screen.

18. (Currently amended) The device according to claim 14 ~~further comprising~~ wherein said one or more coherent light sources comprise a plurality of coherent lasers.

19. (Previously presented) The device according to claim 18 wherein said plurality of coherent lasers comprises at least a red, blue and green laser.

20. (Previously presented) The device according to claim 14 further comprising magnification optics.

21. (Cancelled)

22. (Previously Presented) The method according to claim 12 wherein a rate of writing the blocks is greater than a frame rate of the two dimensional image produced at the screen.

23. (Currently amended) The method according to claim ~~42~~ 24 wherein each of said EASLM is illuminated by a different color light, the two dimensional image formed by combining said adjacent ~~is comprised of the blocks~~ comprised of one or more of said different color light.

24. (Currently amended) The method according to claim 12 wherein the electrically addressed spatial light modulator (EASLM) is comprised of a plurality of three EASLM ~~each illuminated by a different color light~~, wherein each of said adjacent ~~different color blocks is comprised of light diffracted by one or more of said plurality of EASLM~~ are sequentially written to the screen to form a single frame of the two dimensional image.